Microbac

Laboratory Report Number: L14040524

Scott Shane
Ohio Environmental Protection Agency
4675 Homer Ohio Lane
Groveport, OH 43125
Site: MNW110902-OSI

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the accrediting authority listed below. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

This report was certified on May 02 2014

David E. Vandenberg

David Vandenberg – Managing Director

State of Origin: OH
Accrediting Authority: N/A ID:N/A
QAPP: Microbac OVD

Microbac

Lab Report #: L14040524
Lab Project #: 2755.022
Project Name: GROVEPORT OFFICE
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019216	I	0.0			X
0019220	I	0.0			X
0019221	I	0.0			X
0011390	I	0.0			X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	NA
2	Were custody seals intact?	NA
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac

Lab Report #: L14040524
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Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
RS 206	L14040524-01	04/04/2014 12:30	04/07/2014 12:15
RS 209	L14040524-02	04/04/2014 12:35	04/07/2014 12:15
RS 211	L14040524-03	04/04/2014 12:40	04/07/2014 12:15
RS 212	L14040524-04	04/04/2014 12:45	04/07/2014 12:15
RS 213	L14040524-05	04/04/2014 12:50	04/07/2014 12:15
RS 215	L14040524-06	04/04/2014 12:55	04/07/2014 12:15
RS 228	L14040524-07	04/04/2014 13:00	04/07/2014 12:15
RS 229	L14040524-08	04/04/2014 13:05	04/07/2014 12:15
RS 232	L14040524-09	04/04/2014 13:10	04/07/2014 12:15
RS 233	L14040524-10	04/04/2014 13:15	04/07/2014 12:15
RS 238	L14040524-11	04/04/2014 13:20	04/07/2014 12:15
RS 243A	L14040524-12	04/04/2014 13:25	04/07/2014 12:15
RS 243B	L14040524-13	04/04/2014 13:30	04/07/2014 12:15
RS SS01	L14040524-14	04/04/2014 13:35	04/07/2014 12:15
RS 600	L14040524-15	04/04/2014 16:15	04/07/2014 12:15
RS DOWNSTREAM	L14040524-16	04/04/2014 16:40	04/07/2014 12:15

Login Number: L14040524
Department: Volatiles
Analyst: Anthony Canter

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The percent difference was out of range for the following analytes: dichlorodifluoromethane. Please see the applicable QC report for a detailed presentation of the failures.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: 1,1,2,2-tetrachloroethane, 1,1,1-Trichloroethane, 2,2-Dichloropropane, Carbon Tetrachloride. Please see the applicable QC report for a detailed presentation of the failures.

BATCH QA/QC

Method Blank: Analytes were detected above the applicable reporting limit for the following analytes: Toluene-d8. Please see the applicable QC report for a detailed presentation of the failures.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: dichlorodifluoromethane, 1,2-Dichloroethane, Toluene-d8, trichloroethene. Please see the applicable QC report for a detailed presentation of the failures.

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Recoveries out of range were observed for the following analytes: Toluene-d8. Please see the applicable QC report for a detailed presentation of the failures.

Other: Samples 01, were run at a dilution.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 81689
Approved By: Michael Albertson

Login Number: L14040524
Department: Conventionals
Analyst: David Merckle

METHOD

Analysis SW846 9040C,9045D/EPA 150.1/SM4500-H B (pH)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 81258
Approved By: Deanna Hesson

Login Number: L14040524
Department: Metals
Analyst: Qin Xu

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6010

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG471014 - All acceptance criteria were met.

WG471705 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: WG471705 - Due to high levels of target and nontarget analytes, client samples 08, 09, 10, 11, and 12 were analyzed at dilutions for all analytes. Due to a result that was noncompliant on the negative side upon initial analysis, cadmium for client sample 12 was reported from a further dilution analysis. Sample 10 yielded results for cadmium and chromium that exceeded the respective TCLP regulatory limits. Sample 11 yielded results for chromium and lead that exceeded the respective TCLP regulatory limits.

Narrative ID: 81218
Approved By: Sheri Pfalzgraf
Sheri L. Pfalzgraf

Login Number: L14040524
Department: Metals - AA
Analyst:

METHOD

Preparation: SW-846 7470

Analysis: SW-846 7470

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration Verification: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG470991 - All acceptance criteria were met.

WG471039 - All acceptance criteria were met.

WG471397 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 81073
Approved By: Sheri Pfalzgraf

Login Number: L14040524
Department: Conventionals
Analyst: David Merckle

METHOD

Analysis SW846 9014/9010C/SM4500-CN-C,E-20th (Cyanide)

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 81259
Approved By: Deanna Hesson

Login Number: L14040524
Department: Conventionals
Analyst: Roy Halstead

METHOD

Analysis SW-846 1010 (Flashpoint)

Analysis Method 1010 is applicable only to liquid samples as specified in 40 CFR Part 261.21(a) (1). Section 261.21 does not define ignitability criteria, or test methods, for solid matrices. Any flashpoint data reported in this report for samples other than liquids should be considered of screening value only.

HOLDING TIMES

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Duplicates: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

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Narrative ID: 81260
Approved By: Deanna Hesson

Certificate of Analysis

Sample #: L14040524-01 **PrePrep Method:** N/A **Instrument:** PRECISION
Client ID: RS 206 **Prep Method:** 1010 **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 1010 **Cal Date:**
Workgroup #: WG471126 **Analyst:** RAH **Run Date:** 04/14/2014 09:00
Collect Date: 04/04/2014 12:30 **Dilution:** 1 **File ID:** PR14041414522901
Sample Tag: **Units:** Degrees C

Analyte	CAS #	Result	Qual	RL	MDL
Ignitability		23.0		0.000	0.000

Sample #: L14040524-02 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 209 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:17
Collect Date: 04/04/2014 12:35 **Dilution:** 1 **File ID:** OS14041414115901
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Sample #: L14040524-03 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 211 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:20
Collect Date: 04/04/2014 12:40 **Dilution:** 1 **File ID:** OS14041414121001
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Sample #: L14040524-04 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 212 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:24
Collect Date: 04/04/2014 12:45 **Dilution:** 1 **File ID:** OS14041414122301
Sample Tag: **Units:** UNITS

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Sample #: L14040524-05 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 213 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:30
Collect Date: 04/04/2014 12:50 **Dilution:** 1 **File ID:** OS14041414435901
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Sample #: L14040524-06 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 215 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:35
Collect Date: 04/04/2014 12:55 **Dilution:** 1 **File ID:** OS14041414441101
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Sample #: L14040524-07 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 228 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:38
Collect Date: 04/04/2014 13:00 **Dilution:** 1 **File ID:** OS14041414442301
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.00	<	0.000	0.000
Temperature At Determination (C)				0.000	0.000

<	Result is less than the associated numerical value.

Certificate of Analysis

Sample #: L14040524-08 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 229 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:52
Collect Date: 04/04/2014 13:05 **Dilution:** 1 **File ID:** OS14041414445401
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	13.0	>	0.000	0.000
Temperature At Determination (C)				0.000	0.000

>	Result is greater than the associated numerical value.

Sample #: L14040524-09 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 232 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 10:55
Collect Date: 04/04/2014 13:10 **Dilution:** 1 **File ID:** OS14041414450901
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	2.47		0.000	0.000
Temperature At Determination (C)				0.000	0.000

Sample #: L14040524-10 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 233 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 11:00
Collect Date: 04/04/2014 13:15 **Dilution:** 1 **File ID:** OS14041414451901
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.99		0.000	0.000
Temperature At Determination (C)				0.000	0.000

Sample #: L14040524-11 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 238 **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 11:10
Collect Date: 04/04/2014 13:20 **Dilution:** 1 **File ID:** OS14041414453001
Sample Tag: **Units:** UNITS

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.96		0.000	0.000
Temperature At Determination (C)				0.000	0.000

Sample #: L14040524-12 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 243A **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 11:15
Collect Date: 04/04/2014 13:25 **Dilution:** 1 **File ID:** OS14041414454101
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	1.26		0.000	0.000
Temperature At Determination (C)				0.000	0.000

Sample #: L14040524-13 **PrePrep Method:** N/A **Instrument:** ORION-4STAR
Client ID: RS 243B **Prep Method:** 9040C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9040C **Cal Date:**
Workgroup #: WG470551 **Analyst:** DCM **Run Date:** 04/09/2014 11:20
Collect Date: 04/04/2014 13:30 **Dilution:** 1 **File ID:** OS14041414455401
Sample Tag: **Units:** UNITS

Analyte	CAS #	Result	Qual	RL	MDL
Corrosivity pH	10-29-7	13.1		0.000	0.000
Temperature At Determination (C)				0.000	0.000

Sample #: L14040524-15 **PrePrep Method:** N/A **Instrument:** UV-120-1V
Client ID: RS 600 **Prep Method:** 9014-9010C **Prep Date:** N/A
Matrix: LiqWaste **Analytical Method:** 9014-9010C **Cal Date:** 04/01/2014 11:45
Workgroup #: WG470388 **Analyst:** DCM **Run Date:** 04/08/2014 13:42
Collect Date: 04/04/2014 16:15 **Dilution:** 1000 **File ID:** 1V.1404081342-19
Sample Tag: **Units:** mg/L

Analyte	CAS #	Result	Qual	RL	MDL
Cyanide	57-12-5	15300		500	250

Certificate of Analysis

Sample #:	L14040524-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	RS DOWNSTREAM	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	LiqWaste	**Analytical Method:**	8260B	**Cal Date:**	03/28/2014 13:48
Workgroup #:	WG471280	**Analyst:**	ADC	**Run Date:**	04/15/2014 13:11
Collect Date:	04/04/2014 16:40	**Dilution:**	1	**File ID:**	8M396438
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	RL	MDL
1,1,1,2-Tetrachloroethane	630-20-6		U	5.00	0.250
1,1,1-Trichloroethane	71-55-6		U	5.00	0.250
1,1,2,2-Tetrachloroethane	79-34-5		U	5.00	0.200
1,1,2-Trichloroethane	79-00-5		U	5.00	0.250
1,1-Dichloroethane	75-34-3		U	5.00	0.125
1,1-Dichloroethene	75-35-4		U	5.00	0.500
1,1-Dichloropropene	563-58-6		U	5.00	0.250
1,2,3-Trichlorobenzene	87-61-6		U	5.00	0.150
1,2,3-Trichloropropane	96-18-4		U	5.00	0.500
1,2,4-Trichlorobenzene	120-82-1		U	5.00	0.200
1,2,4-Trimethylbenzene	95-63-6		U	5.00	0.250
1,2-Dibromo-3-chloropropane	96-12-8		U	5.00	1.00
1,2-Dibromoethane	106-93-4		U	5.00	0.250
1,2-Dichlorobenzene	95-50-1		U	5.00	0.125
1,2-Dichloroethane	107-06-2		U	5.00	0.250
1,2-Dichloropropane	78-87-5		U	5.00	0.200
1,3,5-Trimethylbenzene	108-67-8		U	5.00	0.250
1,3-Dichlorobenzene	541-73-1		U	5.00	0.250
1,3-Dichloropropane	142-28-9		U	5.00	0.200
1,4-Dichlorobenzene	106-46-7		U	5.00	0.125
2,2-Dichloropropane	594-20-7		U	5.00	0.250
2-Butanone	78-93-3		U	10.0	2.50
2-Chloroethyl vinyl ether	110-75-8		U	10.0	2.00
2-Chlorotoluene	95-49-8		U	5.00	0.125
2-Hexanone	591-78-6		U	10.0	2.50
4-Chlorotoluene	106-43-4		U	5.00	0.250
4-Methyl-2-pentanone	108-10-1		U	10.0	2.50
Acetone	67-64-1		U	10.0	2.50
Benzene	71-43-2		U	5.00	0.125
Bromobenzene	108-86-1		U	5.00	0.125
Bromochloromethane	74-97-5		U	5.00	0.200
Bromodichloromethane	75-27-4		U	5.00	0.250
Bromoform	75-25-2		U	5.00	0.500

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Bromomethane	74-83-9		U	10.0	0.500
Carbon disulfide	75-15-0		U	5.00	0.500
Carbon tetrachloride	56-23-5		U	5.00	0.250
Chlorobenzene	108-90-7		U	5.00	0.125
Chlorodibromomethane	124-48-1		U	5.00	0.250
Chloroethane	75-00-3		U	10.0	0.500
Chloroform	67-66-3		U	5.00	0.125
Chloromethane	74-87-3		U	10.0	0.500
cis-1,2-Dichloroethene	156-59-2		U	5.00	0.250
cis-1,3-Dichloropropene	10061-01-5		U	5.00	0.250
Dibromomethane	74-95-3		U	5.00	0.250
Dichlorodifluoromethane	75-71-8		U	10.0	0.250
Ethylbenzene	100-41-4		U	5.00	0.250
Hexachlorobutadiene	87-68-3		U	5.00	0.250
Isopropylbenzene	98-82-8		U	5.00	0.250
m-,p-Xylene	179601-23-1		U	5.00	0.500
Methylene chloride	75-09-2		U	5.00	0.250
n-Butylbenzene	104-51-8		U	5.00	0.250
n-Propylbenzene	103-65-1		U	5.00	0.125
Naphthalene	91-20-3		U	10.0	0.200
o-Xylene	95-47-6		U	5.00	0.250
p-Isopropyltoluene	99-87-6		U	5.00	0.250
sec-Butylbenzene	135-98-8		U	5.00	0.250
Styrene	100-42-5		U	5.00	0.125
tert-Butylbenzene	98-06-6		U	5.00	0.250
Tetrachloroethene	127-18-4		U	5.00	0.250
Toluene	108-88-3		U	5.00	0.250
trans-1,2-Dichloroethene	156-60-5		U	5.00	0.250
trans-1,3-Dichloropropene	10061-02-6		U	5.00	0.500
Trichloroethene	79-01-6	3.75	J	5.00	0.250
Trichlorofluoromethane	75-69-4		U	10.0	0.250
Vinyl acetate	108-05-4		U	10.0	2.50
Vinyl chloride	75-01-4		U	10.0	0.250

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,2-Dichloroethane-d4	115	80	120	
4-Bromofluorobenzene	90.8	86	115	
Dibromofluoromethane	110	86	118	
Toluene-d8	99.0	88	110	

J	The analyte was positively identified, but the quantitation was below the RL

Certificate of Analysis

U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	RS DOWNSTREAM	**Prep Method:**	3015	**Prep Date:**	04/16/2014 09:19
Matrix:	LiqWaste	**Analytical Method:**	6010B	**Cal Date:**	04/17/2014 08:27
Workgroup #:	WG471705	**Analyst:**	QX	**Run Date:**	04/17/2014 13:50
Collect Date:	04/04/2014 16:40	**Dilution:**	1	**File ID:**	T2.041714.135034
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	RL	MDL
Aluminum, Total	7429-90-5		U	10.0	5.00
Antimony, Total	7440-36-0		U	10.0	5.00
Arsenic, Total	7440-38-2		U	5.00	2.50
Barium, Total	7440-39-3		U	0.500	0.250
Beryllium, Total	7440-41-7		U	0.500	0.250
Cadmium, Total	7440-43-9		U	0.500	0.250
Calcium, Total	7440-70-2		U	25.0	12.5
Chromium, Total	7440-47-3		U	1.00	0.500
Cobalt, Total	7440-48-4		U	1.00	0.500
Copper, Total	7440-50-8		U	1.00	0.500
Iron, Total	7439-89-6		U	5.00	2.50
Lead, Total	7439-92-1		U	5.00	2.50
Magnesium, Total	7439-95-4		U	25.0	12.5
Manganese, Total	7439-96-5		U	0.500	0.250
Nickel, Total	7440-02-0		U	2.00	1.00
Potassium, Total	7440-09-7		U	50.0	25.0
Selenium, Total	7782-49-2		U	4.00	2.00
Silver, Total	7440-22-4		U	0.500	0.250
Sodium, Total	7440-23-5		U	25.0	12.5
Thallium, Total	7440-28-0		U	50.0	12.5
Vanadium, Total	7440-62-2		U	0.500	0.250
Zinc, Total	7440-66-6		U	1.00	0.500

U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-16	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	RS DOWNSTREAM	**Prep Method:**	7470A	**Prep Date:**	04/10/2014 08:48
Matrix:	LiqWaste	**Analytical Method:**	7470A	**Cal Date:**	04/11/2014 13:13
Workgroup #:	WG470991	**Analyst:**	BKT	**Run Date:**	04/11/2014 13:41
Collect Date:	04/04/2014 16:40	**Dilution:**	1	**File ID:**	M7.041114.134135
Sample Tag:	01	**Units:**	mg/L		

Certificate of Analysis

Analyte	CAS #	Result	Qual	RL	MDL
Mercury	7439-97-6		U	0.00800	0.00400
U	Not detected at or above adjusted sample detection limit				

Sample #: L14040524-16
Client ID: RS DOWNSTREAM
Matrix: LiqWaste
Workgroup #: WG471068
Collect Date: 04/04/2014 16:40
Sample Tag:

PrePrep Method: N/A
Prep Method: 9014-9010C
Analytical Method: 9014-9010C
Analyst: DCM
Dilution: 1
Units: mg/L

Instrument: UV-120-1V
Prep Date: N/A
Cal Date: 04/01/2014 11:50
Run Date: 04/14/2014 08:15
File ID: 1V.1404140815-06

Analyte	CAS #	Result	Qual	RL	MDL
Cyanide	57-12-5		U	0.0100	0.00500
U	Not detected at or above adjusted sample detection limit				

Certificate of Analysis

Sample #:	L14040524-01	**PrePrep Method:**		**Instrument:**	HPMS17
Client ID:	RS 206	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	TCLP Leach	**Analytical Method:**	8260B	**Cal Date:**	03/25/2014 18:50
Workgroup #:	WG471540	**Analyst:**	ADC	**Run Date:**	04/16/2014 18:43
Collect Date:	04/04/2014 12:30	**Dilution:**	100	**File ID:**	17M004084
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Benzene		U	500	12.5	D018	500
Carbon tetrachloride		U	500	25.0	D019	500
Chlorobenzene		U	500	12.5	D021	100000
Chloroform	134	J	500	12.5	D022	6000
1,2-Dichloroethane		U	500	25.0	D028	500
1,1-Dichloroethene		U	500	50.0	D029	700
Tetrachloroethene	3040		500	25.0	D039	700
Trichloroethene	2070		500	25.0	D040	500
Vinyl chloride		U	1000	25.0	D043	200

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	86	118	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	113	88	110	*
4-Bromofluorobenzene	108	86	115	

*	Surrogate or spike compound out of range
I	Semiquantitative result (out of instrument calibration range)
J	The analyte was positively identified, but the quantitation was below the RL
U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-01	**PrePrep Method:**		**Instrument:**	HPMS17
Client ID:	RS 206	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	TCLP Leach	**Analytical Method:**	8260B	**Cal Date:**	03/25/2014 18:50
Workgroup #:	WG471680	**Analyst:**	ADC	**Run Date:**	04/17/2014 10:37
Collect Date:	04/04/2014 12:30	**Dilution:**	10000	**File ID:**	17M004113
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Methyl Ethyl Ketone	563000		100000	25000	D035	200000

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	86	118	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	113	88	110	*

Certificate of Analysis

Surrogate	Recovery	Lower Limit	Upper Limit	Q
4-Bromofluorobenzene	112	86	115	

*	Surrogate or spike compound out of range
U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-08 **PrePrep Method:** **Instrument:** ICP-THERMO2
Client ID: RS 229 **Prep Method:** 3015 **Prep Date:** 04/16/2014 09:19
Matrix: TCLP Leach **Analytical Method:** 6010B **Cal Date:** 04/17/2014 08:27
Workgroup #: WG471705 **Analyst:** QX **Run Date:** 04/17/2014 13:03
Collect Date: 04/04/2014 13:05 **Dilution:** 50 **File ID:** T2.041714.130302
Sample Tag: DL01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	250	125	D004	5
Barium, TCLP		U	25.0	12.5	D005	100
Cadmium, TCLP		U	25.0	12.5	D006	1
Chromium, TCLP		U	50.0	25.0	D007	5
Lead, TCLP		U	250	125	D008	5
Selenium, TCLP		U	200	100	D010	1
Silver, TCLP		U	25.0	12.5	D011	5

U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-08 **PrePrep Method:** **Instrument:** CVAA1
Client ID: RS 229 **Prep Method:** 7470A **Prep Date:** 04/14/2014 09:21
Matrix: TCLP Leach **Analytical Method:** 7470A **Cal Date:** 04/16/2014 09:01
Workgroup #: WG471397 **Analyst:** PDM **Run Date:** 04/16/2014 09:22
Collect Date: 04/04/2014 13:05 **Dilution:** 1 **File ID:** M7.041614.092205
Sample Tag: 01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury	0.00415	J	0.00800	0.00400	D009	0.2

J	The analyte was positively identified, but the quantitation was below the RL

Sample #: L14040524-09 **PrePrep Method:** **Instrument:** ICP-THERMO2
Client ID: RS 232 **Prep Method:** 3015 **Prep Date:** 04/16/2014 09:19
Matrix: TCLP Leach **Analytical Method:** 6010B **Cal Date:** 04/17/2014 08:27
Workgroup #: WG471705 **Analyst:** QX **Run Date:** 04/17/2014 13:06
Collect Date: 04/04/2014 13:10 **Dilution:** 100 **File ID:** T2.041714.130633
Sample Tag: DL01 **Units:** mg/L

Certificate of Analysis

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	500	250	D004	5
Barium, TCLP		U	50.0	25.0	D005	100
Cadmium, TCLP		U	50.0	25.0	D006	1
Chromium, TCLP		U	100	50.0	D007	5
Lead, TCLP		U	500	250	D008	5
Selenium, TCLP		U	400	200	D010	1
Silver, TCLP		U	50.0	25.0	D011	5

U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-09 **PrePrep Method:** **Instrument:** CVAA1
Client ID: RS 232 **Prep Method:** 7470A **Prep Date:** 04/14/2014 09:21
Matrix: TCLP Leach **Analytical Method:** 7470A **Cal Date:** 04/16/2014 09:01
Workgroup #: WG471397 **Analyst:** PDM **Run Date:** 04/16/2014 09:24
Collect Date: 04/04/2014 13:10 **Dilution:** 1 **File ID:** M7.041614.092437
Sample Tag: 01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury		U	0.00800	0.00400	D009	0.2

U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-10 **PrePrep Method:** **Instrument:** ICP-THERMO2
Client ID: RS 233 **Prep Method:** 3015 **Prep Date:** 04/16/2014 09:19
Matrix: TCLP Leach **Analytical Method:** 6010B **Cal Date:** 05/01/2014 09:11
Workgroup #: WG471705 **Analyst:** QX **Run Date:** 05/01/2014 11:58
Collect Date: 04/04/2014 13:15 **Dilution:** 10 **File ID:** T2.050114.115819
Sample Tag: DL01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	50.0	25.0	D004	5
Barium, TCLP		U	5.00	2.50	D005	100
Cadmium, TCLP	5.03		5.00	2.50	D006	1
Chromium, TCLP	24.1		10.0	5.00	D007	5
Lead, TCLP		U	50.0	25.0	D008	5
Selenium, TCLP		U	40.0	20.0	D010	1
Silver, TCLP		U	5.00	2.50	D011	5

U	Not detected at or above adjusted sample detection limit

Certificate of Analysis

Sample #: L14040524-10 **PrePrep Method:** **Instrument:** CVAA1
Client ID: RS 233 **Prep Method:** 7470A **Prep Date:** 04/14/2014 09:21
Matrix: TCLP Leach **Analytical Method:** 7470A **Cal Date:** 04/16/2014 09:01
Workgroup #: WG471397 **Analyst:** PDM **Run Date:** 04/16/2014 09:29
Collect Date: 04/04/2014 13:15 **Dilution:** 1 **File ID:** M7.041614.092942
Sample Tag: 01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury		U	0.00800	0.00400	D009	0.2

U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-11 **PrePrep Method:** **Instrument:** ICP-THERMO2
Client ID: RS 238 **Prep Method:** 3015 **Prep Date:** 04/16/2014 09:19
Matrix: TCLP Leach **Analytical Method:** 6010B **Cal Date:** 04/17/2014 08:27
Workgroup #: WG471705 **Analyst:** QX **Run Date:** 04/17/2014 13:17
Collect Date: 04/04/2014 13:20 **Dilution:** 5 **File ID:** T2.041714.131705
Sample Tag: DL01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	25.0	12.5	D004	5
Barium, TCLP		U	2.50	1.25	D005	100
Cadmium, TCLP		U	2.50	1.25	D006	1
Chromium, TCLP	17.8		5.00	2.50	D007	5
Lead, TCLP	14800		25.0	12.5	D008	5
Selenium, TCLP		U	20.0	10.0	D010	1
Silver, TCLP		U	2.50	1.25	D011	5

U	Not detected at or above adjusted sample detection limit

Sample #: L14040524-11 **PrePrep Method:** **Instrument:** CVAA1
Client ID: RS 238 **Prep Method:** 7470A **Prep Date:** 04/14/2014 09:21
Matrix: TCLP Leach **Analytical Method:** 7470A **Cal Date:** 04/16/2014 09:01
Workgroup #: WG471397 **Analyst:** PDM **Run Date:** 04/16/2014 09:32
Collect Date: 04/04/2014 13:20 **Dilution:** 1 **File ID:** M7.041614.093215
Sample Tag: 01 **Units:** mg/L

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury		U	0.00800	0.00400	D009	0.2

U	Not detected at or above adjusted sample detection limit

Certificate of Analysis

Sample #:	L14040524-12	**PrePrep Method:**		**Instrument:**	ICP-THERMO2
Client ID:	RS 243A	**Prep Method:**	3015	**Prep Date:**	04/16/2014 09:19
Matrix:	TCLP Leach	**Analytical Method:**	6010B	**Cal Date:**	04/17/2014 08:27
Workgroup #:	WG471705	**Analyst:**	QX	**Run Date:**	04/18/2014 00:20
Collect Date:	04/04/2014 13:25	**Dilution:**	5	**File ID:**	T2.041814.002000
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	25.0	12.5	D004	5
Barium, TCLP		U	2.50	1.25	D005	100
Chromium, TCLP		U	5.00	2.50	D007	5
Lead, TCLP		U	25.0	12.5	D008	5
Selenium, TCLP		U	20.0	10.0	D010	1
Silver, TCLP		U	2.50	1.25	D011	5

NR	Analyte is not required to be analyzed
U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-12	**PrePrep Method:**		**Instrument:**	ICP-THERMO2
Client ID:	RS 243A	**Prep Method:**	3015	**Prep Date:**	04/16/2014 09:19
Matrix:	TCLP Leach	**Analytical Method:**	6010B	**Cal Date:**	05/01/2014 09:11
Workgroup #:	WG471705	**Analyst:**	QX	**Run Date:**	05/01/2014 12:01
Collect Date:	04/04/2014 13:25	**Dilution:**	20	**File ID:**	T2.050114.120157
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Cadmium, TCLP		U	10.0	5.00	D006	1

U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-12	**PrePrep Method:**		**Instrument:**	CVAA1
Client ID:	RS 243A	**Prep Method:**	7470A	**Prep Date:**	04/14/2014 09:21
Matrix:	TCLP Leach	**Analytical Method:**	7470A	**Cal Date:**	04/16/2014 09:01
Workgroup #:	WG471397	**Analyst:**	PDM	**Run Date:**	04/16/2014 09:34
Collect Date:	04/04/2014 13:25	**Dilution:**	1	**File ID:**	M7.041614.093448
Sample Tag:	01	**Units:**	mg/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury	0.00508	J	0.00800	0.00400	D009	0.2

J	The analyte was positively identified, but the quantitation was below the RL

Certificate of Analysis

Sample #:	L14040524-14	**PrePrep Method:**		**Instrument:**	ICP-THERMO2
Client ID:	RS SS01	**Prep Method:**	3015	**Prep Date:**	04/11/2014 10:18
Matrix:	TCLP Leach	**Analytical Method:**	6010B	**Cal Date:**	04/15/2014 09:30
Workgroup #:	WG471014	**Analyst:**	QX	**Run Date:**	04/15/2014 11:06
Collect Date:	04/04/2014 13:35	**Dilution:**	1	**File ID:**	T2.041514.110645
Sample Tag:	01	**Units:**	mg/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Arsenic, TCLP		U	1.00	0.500	D004	5
Barium, TCLP	0.987		0.100	0.0500	D005	100
Cadmium, TCLP		U	0.100	0.0500	D006	1
Chromium, TCLP		U	0.200	0.100	D007	5
Lead, TCLP		U	1.00	0.500	D008	5
Selenium, TCLP		U	0.800	0.400	D010	1
Silver, TCLP		U	0.100	0.0500	D011	5

U	Not detected at or above adjusted sample detection limit

Sample #:	L14040524-14	**PrePrep Method:**		**Instrument:**	CVAA1
Client ID:	RS SS01	**Prep Method:**	7470A	**Prep Date:**	04/11/2014 14:19
Matrix:	TCLP Leach	**Analytical Method:**	7470A	**Cal Date:**	04/15/2014 15:01
Workgroup #:	WG471039	**Analyst:**	BKT	**Run Date:**	04/15/2014 15:21
Collect Date:	04/04/2014 13:35	**Dilution:**	1	**File ID:**	M7.041514.152158
Sample Tag:	01	**Units:**	mg/L		

Analyte	Result	Qual	RL	MDL	EPA HW#	Reg. Limit
Mercury		U	0.00200	0.00100	D009	0.2

U	Not detected at or above adjusted sample detection limit

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 2, 2014

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BAF - BRICE A. FENTON
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DAK - DEAN A. K	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JLL - JOHN L. LENT
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RS - ROSEMARY SCOTT
SAV - SARAH A. VANDENBERG	SDC - SHALYN D. CONLEY
SEP - SUZANNE J. PAUGH	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TLC - TYLER L. CORDELL
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
TPA - TYLER P. AMRINE	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 02, 2014

Qualkey: STD_ND=U

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
FL	Free Liquid
H1	Sample analysis performed past holding time.
I	Semiquantitative result (out of instrument calibration range)
J	The analyte was positively identified, but the quantitation was below the RL
J,B	Analyte detected in both the method blank and sample above the MDL.
J,H1	The analyte was positively identified, but the quantitation was below the RL. Sample analysis performed past holding time
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Not detected at or above adjusted sample detection limit
U,H1	Not detected; sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 18269

158 Starlite Drive
Marietta, OH 45750

Microbac

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Fax: 740-373-4835

Company Name: Ohio EPA	
Project Contact: Scott Shane	Contact Phone #: 614 836 8764
Turn Around Requirements: normal	Location:
Project ID: MNE 140404-10SI	
Sampler (print): Bart Ray	Signature: [signature]

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	pH-corrosivity	TCLP metals	TCLP VOCs	ignitability	cyanide	total metal	total vols	total cyanide						TOTAL # (LAB USE)	Program: ☐ CWA
RS 206		X	04-04-14	1230	liquid	1				✓	✓											
RS 209		X	↓	1235	↓	1		✓														
RS 211		X	↓	1240	↓	1		✓														
RS 212		X	↓	1245	↓	1		✓														
RS 213		X	↓	1250	↓	1		✓														
RS 215		X	↓	1255	↓	1		✓														
RS 228		X	↓	1300	↓	1		✓														
RS 229		X	↓	1305	↓	1		✓	✓													
RS 232		X	↓	1310	↓	1		✓	✓													
RS 233		X	↓	1315	↓	1		✓	✓													
RS 238		X	↓	1320	↓	1		✓	✓													
RS 243A		X	↓	1325	↓	1		✓	✓													run pH 1st
RS 243 B		X	↓	1330	↓	1		✓														
RS SS01		X	↓	1335	solid	1			✓													
RS600		X	040414	1615	liquid	1					~~NB~~	✓										→ RS600
RS Downstream		X	040414	1640	liquid	5							✓	✓	✓							*suspect CN

Microbac OVD
Received: 04/07/2014 12:15
By: DEAN K
2210000052257

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	4/4/14	1635	R. Ohlemacher	R. Ohlemacher	04/07/14	1010	Dean [signature]

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:
Dean [signature]	040714	1210				

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page ______ of ______

Internal Chain of Custody Report

Login: L14040524
Account: 2755
Project: 2755.022
Samples: 16
Due Date: 21-APR-2014

Samplenum	Container ID	Products
L14040524-01	347043	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	07-APR-2014 14:32	ERP		

Samplenum	Container ID	Products
L14040524-01	347044	826-TC FLASH TC-ZHE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	07-APR-2014 14:32	ERP		
2	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
3	STORE	TCL	W1	11-APR-2014 12:27	CLS	BRG	
4	STORE	EXT	A2	14-APR-2014 16:20	CLS	JDH	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		07-APR-2014 14:32	ERP		

Samplenum	Container ID	Products
L14040524-02	347045	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:18	CLS	DCM	

Samplenum	Container ID	Products
L14040524-03	347046	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:18	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L14040524
Account: 2755
Project: 2755.022
Samples: 16
Due Date: 21-APR-2014

Samplenum	Container ID	Products
L14040524-04	347047	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:18	CLS	DCM	

Samplenum	Container ID	Products
L14040524-05	347048	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:19	CLS	DCM	

Samplenum	Container ID	Products
L14040524-06	347049	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:19	CLS	DCM	

Samplenum	Container ID	Products
L14040524-07	347050	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:19	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L14040524
Account: 2755
Project: 2755.022
Samples: 16
Due Date: 21-APR-2014

Samplenum	Container ID	Products
L14040524-08	347051	COR-PH TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	W1	09-APR-2014 13:20	CLS	DCM	
4	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
5	STORE	TCL	A2	11-APR-2014 12:26	CLS	BRG	

Samplenum	Container ID	Products
L14040524-09	347052	COR-PH TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	W1	09-APR-2014 13:20	CLS	DCM	
4	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
5	STORE	TCL	A2	11-APR-2014 12:26	CLS	BRG	

Samplenum	Container ID	Products
L14040524-10	347053	COR-PH TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	W1	09-APR-2014 13:20	CLS	DCM	
4	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
5	STORE	TCL	A2	11-APR-2014 12:26	CLS	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L14040524
Account: 2755
Project: 2755.022
Samples: 16
Due Date: 21-APR-2014

Samplenum	Container ID	Products
L14040524-11	347054	COR-PH TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:19	CLS	DCM	
4	ANALYZ	W1	WET	09-APR-2014 13:19	DCM	CLS	
5	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
6	STORE	TCL	A2	11-APR-2014 12:26	CLS	BRG	

Samplenum	Container ID	Products
L14040524-12	347055	COR-PH TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	W1	09-APR-2014 13:20	CLS	DCM	
4	ANALYZ	W1	TCL	10-APR-2014 12:59	BRG	CLS	
5	STORE	TCL	A2	11-APR-2014 12:26	CLS	BRG	

Samplenum	Container ID	Products
L14040524-13	347056	COR-PH

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	F1	07-APR-2014 14:32	ERP		
2	ANALYZ	F1	WET	09-APR-2014 09:05	DCM	CLS	
3	STORE	WET	A2	09-APR-2014 13:19	CLS	DCM	

Samplenum	Container ID	Products
L14040524-14	347057	TC-EX

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	07-APR-2014 14:32	ERP		
2	ANALYZ	W1	TCL	10-APR-2014 09:34	BRG	CLS	
3	STORE	TCL	A2	11-APR-2014 12:27	CLS	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Internal Chain of Custody Report

Login: L14040524
Account: 2755
Project: 2755.022
Samples: 16
Due Date: 21-APR-2014

Samplenum	Container ID	Products
L14040524-15	347058	CN

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	07-APR-2014 14:32	ERP		
2	ANALYZ	W1	WET	08-APR-2014 07:52	DCM	ERP	

Samplenum	Container ID	Products
L14040524-16	347059	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-APR-2014 14:32	ERP		
2	ANALYZ	V1	ORG4	07-APR-2014 16:09	JDS	CLS	
3	ANALYZ	V1	ORG4	09-APR-2014 13:24	JDS	CLS	
4	STORE	ORG4	A2	21-APR-2014 08:23	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-APR-2014 14:32	ERP		
2	ANALYZ	V1	ORG4	07-APR-2014 16:10	JDS	CLS	
3	ANALYZ	V1	ORG4	09-APR-2014 13:24	JDS	CLS	
4	STORE	ORG4	A2	21-APR-2014 08:23	CLS	AWE	

Samplenum	Container ID	Products
L14040524-16	347060	AG AL AS BA BE CA CD CO CR CU DIG-ICP FE HG Tl

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	07-APR-2014 14:32	ERP		
2	STORE	W1	DIG	16-APR-2014 14:22	CLS	ERP	

Samplenum	Container ID	Products
L14040524-16	347947	CN

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-APR-2014 09:09	CLS		
2	ANALYZ	W1	WET	11-APR-2014 10:08	DCM	CLS	
3	STORE	WET	A2	16-APR-2014 08:06	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login